The blunt forecast and two-fisted posture were part of an effort to rebuild AT&T's credibility on Wall Street. The company has lost almost two points of market share in the past year to competitors ranging from MCI Communications Corp. and Sprint Corp. to simple "dial-around" carriers that AT&T customers can use to bypass the incumbent carrier by pressing a few buttons.

But the prospect of further spending and looming competition from the Bells and others is likely to further hurt AT&T's short-term prospects. Many analysts may continue to regard the company's stock with little enthusiasm until Mr. Walter and AT&T begin to turn things around.

Jack B. Grubman, analyst at Salomon Brothers Inc., called Mr. Walter's forecast of AT&T's spending and near-term earnings "the most candid assessment of AT&T's financial performance since its 1984 breakup." But Mr. Grubman said he remains pessimistic, adding that the company will be increasing its investments at the same time as competition continues to increase. "The issue is simple," Mr. Grubman said. "What we know with some degree of certainty is that the next two or three years are going to be tougher. Can they get to their financial goals in year five?"

In January, Mr. Grubman cut his 1997 earnings estimate to $3 a share. Yesterday, he reduced the estimate again, to $2.55 per share. "The earnings dilution in the core business is bigger than any of us thought," he said.

AT&T's audacious spending will in its first stages include the total resale of the Bells' services, including the use of the Bells' network facilities, in much of the country as it seeks to convert the Bells' local phone customers to its own local service. "It's very important for us to get in quickly," said Gail McGovern, executive vice president of AT&T's Consumer Markets. "Our customers want a single bill and we'll do what we have to to deliver that."

Long-term AT&T will resell portions of the Bell network, at a greatly reduced cost, build its base of local customers and then use this foundation to fund its own construction of additional network switching and transmission facilities, AT&T executives said.

In the corporate market, AT&T has begun offering Digital Link, a service that connects AT&T business customers directly to the AT&T network and lets them make outbound local calls, bypassing the Bells. Currently Digital Link is accessible to 60% of the nation, according to Jeff Weitzen, AT&T's Business Markets executive vice president. By the end of the year, business customers will be able to get inbound calls as well, delivered by the AT&T network, not only boosting AT&T revenue but cutting its sizable access payments to the Bells for connecting calls locally, executives said.

AT&T can hit a big part of the country with relatively little in the way of its own network facilities. The Bells' 22,000 switches dwarf AT&T's roughly 140. But only about 1,200 of those Bell switches handle 75% of local traffic, estimated John Petrillo, AT&T's strategy chief.

Meanwhile, AT&T has been bulking up its own system. Frank Ianna, president of the AT&T network, said the company doubled its call-handling capacity between 1994 and 1995. And last year, when the company spent $6.7 billion on its network, it doubled the capacity of its powerful signaling network, which tells traffic where to go.

On the cost-cutting side, AT&T said it will scale back significantly the practice of sending checks to long-distance customers and will replace that with a less-expensive loyalty program in which customers are rewarded with free long-distance service for staying with AT&T.

By its presentation AT&T reinforced that it has "a lot of power in the organization . . . and good management depth," said Thomas Aust, an analyst at Citicorp Securities Inc. But he said, "There is still major uncertainty as to whether they can capture local customers and whether they're too dependent on what may turn out to be a very fragile marketing theme."

AT&T will have to go for a massive pre-emptive strike in the local market if it is to appropriately stun the Bells and other local rivals seeking its long-distance clients. Mr. Petrillo said GTE and Southern New England Telecommunications Inc. have already made sizable inroads into AT&T's long-distance turf by bundling their own local and long-distance offerings for customers.

"The costs of reacquiring those customers is high, higher than it cost to originally acquire them," Mr. Petrillo said.

San Diego Gets First Look At Digital Future

Multiple service providers converge on coastal community with new data, voice offerings

By Peter Lambert

If a communications company were to target just one U.S. city for advanced services, it would be hard to find more fertile ground than San Diego in 1997.

According to New York-based Scarborough Research, San Diego leads the nation in modem use and ranks fourth nationally in personal computer ownership.

Research would find even higher PC and modem usage in areas just north of San Diego, says Jim Fellhauer, president of Time Warner Cable's San Diego division, doing business there as Southwestern Cable TV. The region has gained the moniker "Telecom Valley" among communications manufacturers, such as General Instrument Corp., Qualcomm Inc. and Science Applications International Corp.

As an indication of residents' hunger to be wired, Southwestern claims as paying customers 81 percent of the 210,000 homes it passes, and Cox Communications Inc. claims about 73 percent of the 555,000 homes it passes, both well above the national penetration average of 65 percent. Cox and Time Warner say their service areas include 50,000 America Online Inc. subscribers each.

"San Diego is becoming known as Futureville," says Bill Geppert, vice president and general manager at Cox of San Diego.

From the customer end, a business or consumer looking to set up shop in a market with advanced communications infrastructures could fare well in San Diego, with half a dozen competitive access providers, or CAPs; seven wireless communications providers, including Pacific Bell; San Diego's two primary cable companies — each 80 percent rebuilt for two-way services — plus PacBell's as yet unused Hybrid Fiber-Coax, or HFC network.

The city could be a national model for local competition based on state-of-the-art networks.

Full-Service Stirrings

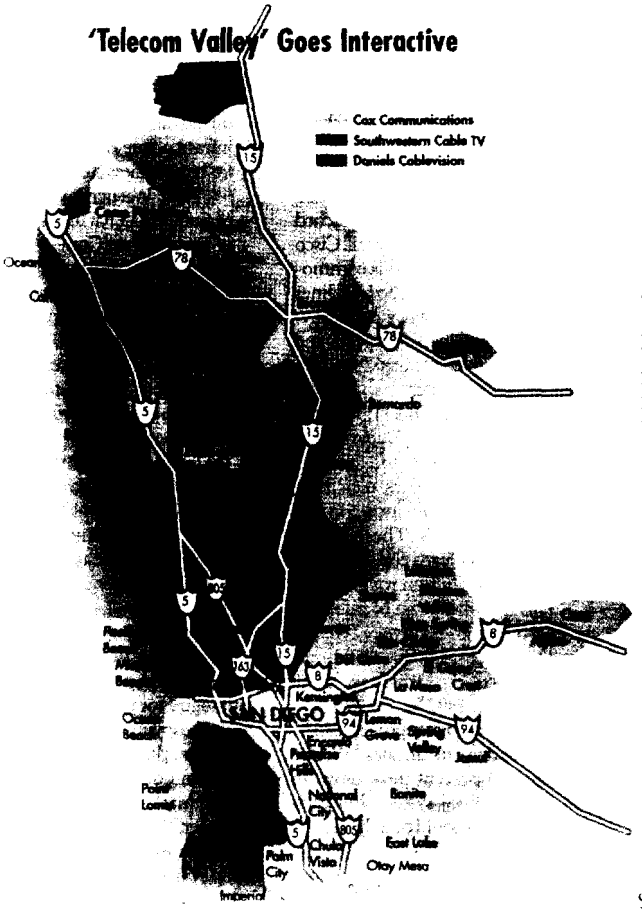
Thanks to the burgeoning carrier competition, San Diego has begun to see the launch of high-speed data and digital wireless services before most of the rest of the world.

At the network construction level, the pump is well-primed.

Over the past four years, Cox says it has spent $300 million, and Southwestern Cable TV $120 million, on two-way rebuilds of their HFC networks, which are 80 percent to 85 percent complete now with 100 percent targeted by summer. The networks deliver fiber to an average 500-home neighborhood, meaning few customers sharing 750 megahertz of bandwidth.

Consequently, the majority of Cox's 475,000 subscribers and Time Warner's 180,000 subscribers are plugged into fully activated, two-way networks that can afford hundreds of digital channels for data, video and voice services.

PacBell could become a cable overbuilder in the area. Over the past two years, it has passed tens of thousands of homes in the area, mostly on Time Warner's turf, with its own 750-MHz network. That network, like the HFC network in San Jose, may lie dormant until SBC Communications Inc. completes its acquisition of PacBell, perhaps by next month, and the new company's strategy is ironed out.



Also under way in Futureville: development of a wireless digital data infrastructure.

In November 1996, Pacific Bell Mobile Services launched Mobile PCS, or personal communications services, leading the field of at least seven wireless digital players eyeing the market.

One month after PacBell's PCS debut, Cox launched a competing service through its majority interest in Sprint PCS in southern California. Declining to reveal numbers, Cox says it's selling the service 30 percent ahead of projections.

San Diego has begun to see the launch of high-speed data and wireless digital services

Rather than launch its own PCS business, Time Warner is negotiating to offer HFC transport and microcell placement to other PCS licensees.

By summer, PacBell expects to add more than voice and simple messaging to the PCS services package, starting with Nokia Corp.'s $2,000 Nokia 9000 Communicator, a mobile e-mail, Internet access, phone, fax and organizer device. PacBell also is developing a telephone number-Internet address interface for crossover delivery of e-mail via PCS.

Indicative of multiservice price wars to come, three months after launch PacBell still offers a $50 rebate on a $149 phone. And through Feb. 14, Cox's Sprint PCS offered no monthly charge for life to pioneer adopters.

Digital wireline telephony also is on the way. By year's end, Cox says it will roll out wireline voice over its cable networks. And Southwestern Cable's sister company, Time Warner AxS of California LP, is preparing to offer switched services to businesses this spring, as well as testing residential phone technology from Motorola Inc., Northern Telecom Inc. and Tellabs.

Residents also will see digital cable television before much of the rest of the nation. Cox is in line for digital broadcast TV terminals for the rollout of 100-plus-channel Headend in the Sky digital video service in the third quarter.

At the same time, Fellhauer says, Southwestern Cable TV is lobbying its parent to be among the first users of Time Warner's Pegasus two-way digital TV terminal in late 1997 or early 1998.

Given that kind of competitive pressure, observers predict PacBell must expand its own HFC network there or return to the negotiating table to purchase licenses for digital wireless cable, also known as Multichannel Multipoint Distribution Service, or MMDS, in San Diego and San Francisco. Just north of San Diego, in Los Angeles and Orange County, PacBell is set to launch 150-channel MMDS in April.

Net Access Leads Way

On the heels of last fall's PCS launches come multiple data service offerings this winter and spring.

With $25-per-month Integrated Services Digital Network, or ISDN, service already available from PacBell, tens of thousands of San Diego consumers could also gain access to 10-megabit-per-second cable modems, at about $45 per month, by year's end.

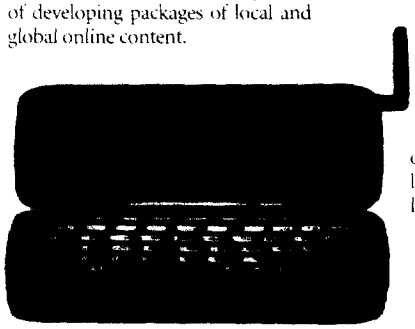
Hundreds of businesses looking for price and feature competition in data services are being courted by five CAPs and PacBell.

On Feb. 6, Time Warner's Southwestern Cable TV launched its RoadRunner cable online service to about 150,000 homes equipped for two-way service.

In the next 90 days, Cox is scheduled to launch the @Home cable online service, in which Cox is an equity partner, to more than 400,000 ▶

▼ two-way-enabled homes.

Cox, Time Warner and PacBell all will operate as Internet service providers, or ISPs, as well as passive data service carriers. @Home, RoadRunner and Pacific Bell At Hand all are many months into the process of developing packages of local and global online content.



All-in-one: phone, e-mail, fax, Net surfing

In July 1995, PacBell launched wholly-owned but independent subsidiary PacBell Internet Services and two months later offered dedicated Internet access to large businesses. In May 1996, it launched dial-up analog access for consumers and small businesses. *The carrier counts more than* 100,000 ISDN customers statewide, though it makes no regional figures available.

PacBell also could enter the high-speed race in San Diego.

This month, the carrier is expanding its high-speed Digital Subscriber Line, or xDSL, beta trial from about 11 users in San Ramon to 100 or so in San Ramon, Danville and Palo Alto, Calif. It will add remote local area network, or LAN, access to the current Internet access for the next phase of the trial.

By fall, PacBell projects limited commercial rollouts of Asynchronous Transfer Mode, or ATM, xDSL with expanded deployments statewide in 1998, though it won't yet declare San Diego among the early targets.

PacBell also could use its dormant HFC plant in San Diego to roll out its own cable modems.

"We're not blind," says Time Warner's Fellhauer. "We've seen PacBell build HFC in our service area. They're still fumbling with it, but it's there for some reason. We take it seriously, and we're prepared."

Fight Or Switch

"If people are reluctant to switch providers when they're happy, my job is to do everything to make them too happy to leave," Fellhauer says.

Mario Vecchi, chief technology officer for Excalibur Group, the Time Inc.-Time Warner Cable joint venture behind RoadRunner, says cable modems will keep customers extraordinarily happy by avoiding busy signals.

Vecchi says RoadRunner will avoid the kind of catastrophic performance problems faced by AOL in recent months, in great part because of its "connectionless" architecture. At $44.95 a month, RoadRunner users will virtually always be logged on to the service.

"AOL's big problem is that every user must set up a physical connection every time he logs on, and the clock is ticking, so he logs off when he's not moving data. We, on the other hand, are connectionless, like a LAN, and everyone stays logged on all the time. In a few years, people will realize that that is an even greater advantage for us than speed," Vecchi says.

In San Diego, both Time Warner and Cox use Motorola Multimedia cable modems designed to deliver data at 10 Mbps into the home and 784 kilobits per second out of the home, and to serve up to five e-mail accounts each.

Time Warner uses proxy, e-mail and management servers from Sun Microsystems Inc. and content fetch software, ATM switches and integration services from Toshiba America Information Systems Inc. The system's network monitoring and management are based on Hewlett-Packard Co.'s HP OpenView system.

The Time Warner headend features half a dozen Sun PROXY Ultrasparc servers for local and cached global content, as well as e-mail. Cisco Systems Inc.'s 7500 routers accommodate up to seven 1.5-Mbps T1 lines and frame relay circuits for connectivity to the Internet, local enterprises and the MCI Communications Corp. network operations center.

From the headend, 155-Mbps Synchronous Optical Network, or SONET, multiplexers and Toshiba AX-1500 ATM switches distribute RoadRunner to 11 hubs around Time Warner's fiber rings. There are 18 hubs planned by year's end, each with a Motorola distribution router.

"This is a who's who of information hardware and software," Vecchi says. The starter platform will support 15,000 subscribers, "which we think we'll achieve in 1997."

However, each component can be scaled up as demand dictates. "We had projected 30 percent peak usage in our Akron [Ohio] system, but early results suggest it could be as high as 60 percent," he says.

In addition to keeping Excalibur prepared to meet sudden leaps in demand, "50 or 60 percent simultaneous usage opens major possibilities for advertising and other revenue opportunities with 'push' technology," he says.

Time Warner has pledged a modem to 110 public and private schools and is negotiating to install fiber to the University of California San Diego campus, a customer ripe for fast data with its microelectronics and biotechnology research, Fellhauer says.

"The gating factor early on will be our ability to install quickly," he says. Teams of cable and PC installers are taking two to three hours to do the job well. Toshiba provides the PC expert to each team.

Customer Flood

In terms of customer support, Southwestern Cable will provide the first two help-desk tiers, first for questions that can be solved at the network level and second for basic computer hardware and software solutions. MCI provides third-tier support.

"We've got a sophisticated labor pool here, and they're all getting extensive training from Motorola, Toshiba and us," Fellhauer says.

Flooded with calls from word-of-mouth publicity, Time Warner postponed the early February launch of infomercials and spots promoting RoadRunner, but Fellhauer ordered that a 30-second spot be produced to apologize for the early backlog.

Occupying only 20 percent of the entire market, Time Warner is, for the moment, disadvantaged in terms of mass market promotion of RoadRunner, "but once Cox launches @Home, we'll buy mass media that will help both them and us," Fellhauer says. "We'll have telecommuters living in one system and working in another."

Covering 80 percent of San Diego with a two-way network, Cox says it is ready to roll out one service after another — PCS, @Home, digital television, wireline telephony, long-distance telephony and even its own Visa credit card.

While Sprint PCS by Cox is available across the whole network, on some parts of its plant Cox has PCS, high-speed data and analog video operating together — "a first, we think, anywhere," says Vice President and General Manager Bill Geppert.

In early February, a handful of Cox employees were online for alpha tests of @Home. The waiting list for the service stood at 1,800 customers. Like Southwestern, Cox's headend features state-of-the-art server, router and distribution systems.

No matter what the new service, Cox believes "there needs to be both a value enhancement and a tie to the older core services," says Art Reynolds, vice president of new product development. "With Sprint PCS by Cox, for example, you get an added value if you're a Cox cable customer of simplified pricing."

In that respect, the groundwork is already being laid with consumers to position Cox's brand as a single stop for communications services.

"We believe the consumer needs someone to help him navigate through all the new high technology," Geppert says. "We're the company you call to come out and service all your in-home communications needs."

To put customer-friendly flesh on last year's $1 million in advertising, Cox of San Diego offers two-hour service-call windows and on-time guarantees, and has broadened staff expertise.

For data services, @Home is developing a certification program for technicians and will provide second- and third-tier help-desk support. Cox will supply both PC and cable installation staff. ▲

The Business Of Business

Although the marketing emphasis for San Diego's cable operators is on advanced residential services, infrastructure is in place to compete for big-business customers.

Time Warner AxS of California LP, a unit of Time Warner Communications, shares a 2,000-mile regional fiber ring with Southwestern Cable TV, passing 1,500 businesses with Synchronous Optical Network, or SONET, transport. The company filed tariffs for digital cross-connect and switched services, the last of which it intends to launch in the third quarter.

AxS will complete testing of its central office this month and is positioned to operate as a facilities-based local carrier over Time Warner's residential network, should parent Time Warner give the OK on wireline telephone entry.

"I'm doing a lot of business with Internet service providers, and everyday I sell T1s to people who want to connect to the Internet," says AxS General Manager Terry Churchill.

"We also mention to our customers, 'Hey, our sister company has RoadRunner [cable modem service], and you could access your enterprise and the Internet via RoadRunner, or I could hook up a high-speed connection for the enterprise and interface it with the cable plant, and you could employ whatever tunneling or other security features you want," he says. — *P.L.*

Access Reform and Universal Service Solutions

Nancy Lubamersky
Rex Mitchell
Nancy Woolf

Any Integrated Solution Must Ensure *Full* Recovery of Costs Allocated to the Interstate Jurisdiction

- LEC access prices are based on the costs allocated to the interstate jurisdiction by the separations process and must be recovered
- If interstate access prices are reduced, then some alternative means of cost recovery must take its place
  - One method, which we favor, is to increase the single-line SLC in combination with an appropriately sized Universal Service Fund
- Until separations reform, the determination of full and proper cost recovery must be made in the access reform proceeding

Overall "Compromise" Solution Proposal

- A "compromise" solution should maximize benefits for consumers and competition
  - ➔ Lower access charges
  - ➔ Preserve universal service and affordable residential basic rates in all geographic areas
  - ➔ Encourage competition and investment in all areas, rather than just in low cost/high revenue areas

"Compromise" Solution Details

Solution Elements	Description	Benefits	PB Impact
• Significant Access Price Reductions	• Switched access prices are "pegged" to an industry average of $0.01 per minute • No company's access charges should be forced below $0.01 until geographic deaveraging of all elements is implemented	• *Should* lower long distance prices for consumers • Stimulates competition and investment	• $0.01 per minute • $295M revenue reduction
• Per-Line Charge <u>Preferred Option:</u> *Modest Per-Line Charge (SLC) Increase*	• SLC on single line end-users increased by $1.00 per line	• Reduces the subsidy burden on heavy toll users • Minimizes market distortion – cost causer pays • Minimizes uneconomic arbitrage opportunities	• $1.00 per line increase • $125M

"Compromise" Solution Details

Solution Elements	Description	Benefits	PB Impact
• Per-Line Charge <u>Back-up Options:</u> *Modest Residual Per-Line Charge*	• Per-line charge billed to IXCs on a presubscribed line basis • IXCs may pass through per-line charges to their presubscribed end-users • Residual per-line charge applies to unbundled loops	• Reduces the subsidy burden on heavy toll users • Minimizes uneconomic arbitrage opportunities • Per-line NTS recovery is widely supported	• $0.70 per presubscribed line • $125M est. revenue increase
• Appropriately Sized Universal Service Fund	• $20 affordability benchmark • $7.3B interstate USF • Net Receipts from the interstate fund are available to offset NTS cost recovery (i.e. access prices reductions) • Does not include education or health care	• Competition and investment encouraged in high cost areas • Greater choice of providers for high cost customers • Preserves low basic rates everywhere	• $170 to $240M est. net receipts

- ***Impact of overall compromise solution would be revenue neutral on day one***

A Per-Line Charge is a Step in the Right Direction

- Subsidy recovered through a per-line charge is superior to subsidy recovered through a usage charge
  - The subsidy burden on heavy toll users is reduced
  - The per-line charge is spread more evenly across customers
  - The per-line charge is more closely aligned with how NTS costs are incurred

Universal Service Should be a Significant Part of Any Integrated Solution

- ***Subsidy to high cost areas must be specifically provided***
  - Implicit subsidies will be reduced
  - Technology is assisting high volume, low cost areas but not high cost areas
- ***Only the Universal Service solution addresses geographic variations in costs***
  - Geographic cost differences are enormous for loops. In one wirecenter in California (Chico), loop costs vary from $24 to $128.
  - With usage charges, high usage customers subsidize low usage customers
  - With a residual per-line charge, urban customers (particularly business customers) will continue to subsidize rural customers
- ***Universal Service is competitively neutral***
  - Funds are collected from all telecommunications providers
  - Subsidy payments are available to any carrier serving high cost areas

Subsidy Should Be Recovered From Unbundled Loops

- Universal service is at risk if a per-line charge is avoidable
  - As long as subsidy support remains in access charges (e.g., per-line charge), the same subsidy should apply to unbundled loops
  - Otherwise, real support for universal service will diminish as CLCs choose unbundled loops to serve customers in order to avoid the per-line charge

The Same Rates Should Apply to Functionally Equivalent Services

- The Act precludes carriers from charging different rates for functionally equivalent or "like" services
  - Unbundled loops and retail exchange lines provide the same functionality, whether purchased as unbundled elements or access lines
  - The same per-line charge should apply to unbundled loops and presubscribed lines

The Introduction and Expansion of Competition Makes Regulatory Relief an Imperative

- The introduction of local competition demands regulatory relief (i.e., pricing flexibility)
- The existence of intense competition in California is justification for further regulatory relief (i.e., removal of services/geographies from price caps)

Phase 1 Proposal - Pricing Flexibility

- Trigger: Interconnection Agreement or Statement of Generally Available Terms (SGAT)
- Elements of Phase 1 pricing flexibility:
  - Simplified price cap structure
  - Term and volume discounts
  - Contracts
  - Geographic deaveraging
  - New services treatment
- Benefit: Increases customers' options

Phase 2 - Removal of Services from Price Cap Regulation

- Trigger: Substantial competition has been demonstrated at the wire center level
  - Unbundled elements have been purchased
  - Minutes are exchanged
- Elements of Phase 2:
  - Remove competitive services and geographic areas from price cap regulation
- Benefit: Encourages innovation and investment

Removal of Competitive Services/Geographies From Price Caps

- Requires one time adjustment to PCIs and SBIs
- Will not increase headroom for services and/or geographies still subject to price caps
- Customers remaining in price caps will not be harmed

USTA Industry Summary of Access Competition
as of February 13, 1997[1]

	Industry	*Pacific Bell*	*% of Total Industry*
Access Lines	143M	15M	10%
Number of Competitive Networks	326	28	9%
Number of Colocation Cages or Virtual Equivalents	912	208	23%
Number of Cross-Connects			
DS1 Equivalents	111,193	20,701	19%
DS0 Equivalents	4,301	1,870	43%
Number of Local Interconnection Trunks	140,986	20,704	14%
Number of CLEC NXX Codes[2]	2,466	548	22%

(1) Other than the number of access lines & CLEC NXX codes, Ameritech data is not included.
(2) Number of NXX codes is provided by the Bellcore Traffic Routing Administrator.

Alternative Switching and Transport Abound

Metropolitan Area	*Competitive Fiber Networks*	*Fiber Miles (Est.)*	*Buildings On-Net (Est.)*	*Local Switching Capability (doesn't include IXC POPs)*	*NXX Codes Opened (thru 3/1/97)*	*Collocation Cages (thru 3/1/97)*	*Cross-Connects DS1 Equiv. (thru 3/1/97)*	*Local Interconnection Trunks (thru 2/10/97)*
San Diego	6	1,000	336	8	61	32	5,531	3,266
San Francisco	6	1,000	954	6	194	84	9,887	7,105
Los Angeles	8	3,000	486	11	184	32	7,200	6,244
Orange County	5	* Included In LA	* Included In LA	3	66	25	4,207	1,029
Sacramento	3	320	133	3	27	19	2,958	1,284
All Other	3	100	121	3	97	16	934	3,571
Total Serving Area	**31**	**5,420+**	**2,030+**	**35**	**629**	**208**	**30,717**	**22,500**

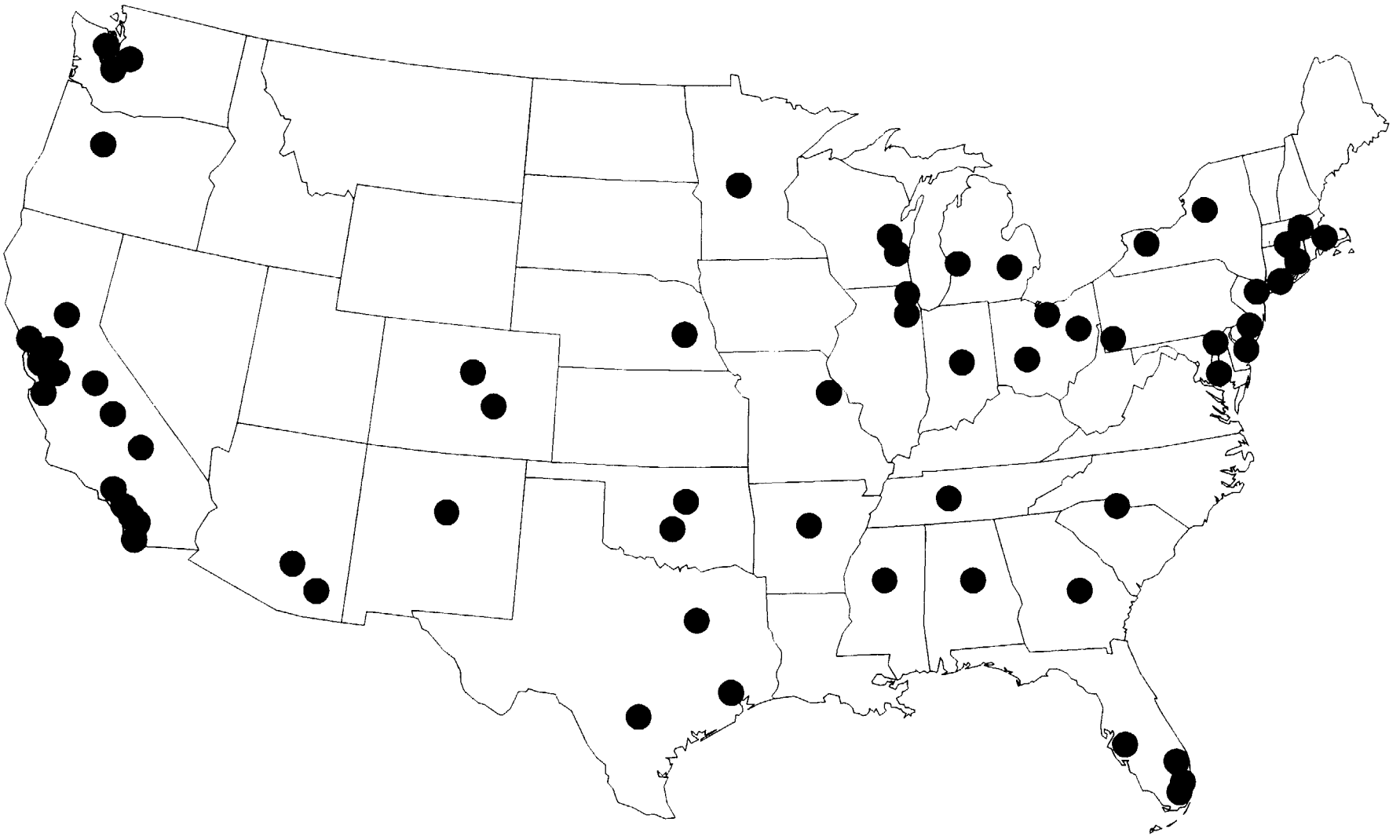
- Volume increase due to new Market Research and actuals
- Does not include wireless or IXC backbone networks

Competition in Pacific Bell's Service Areas is Robust and Growing

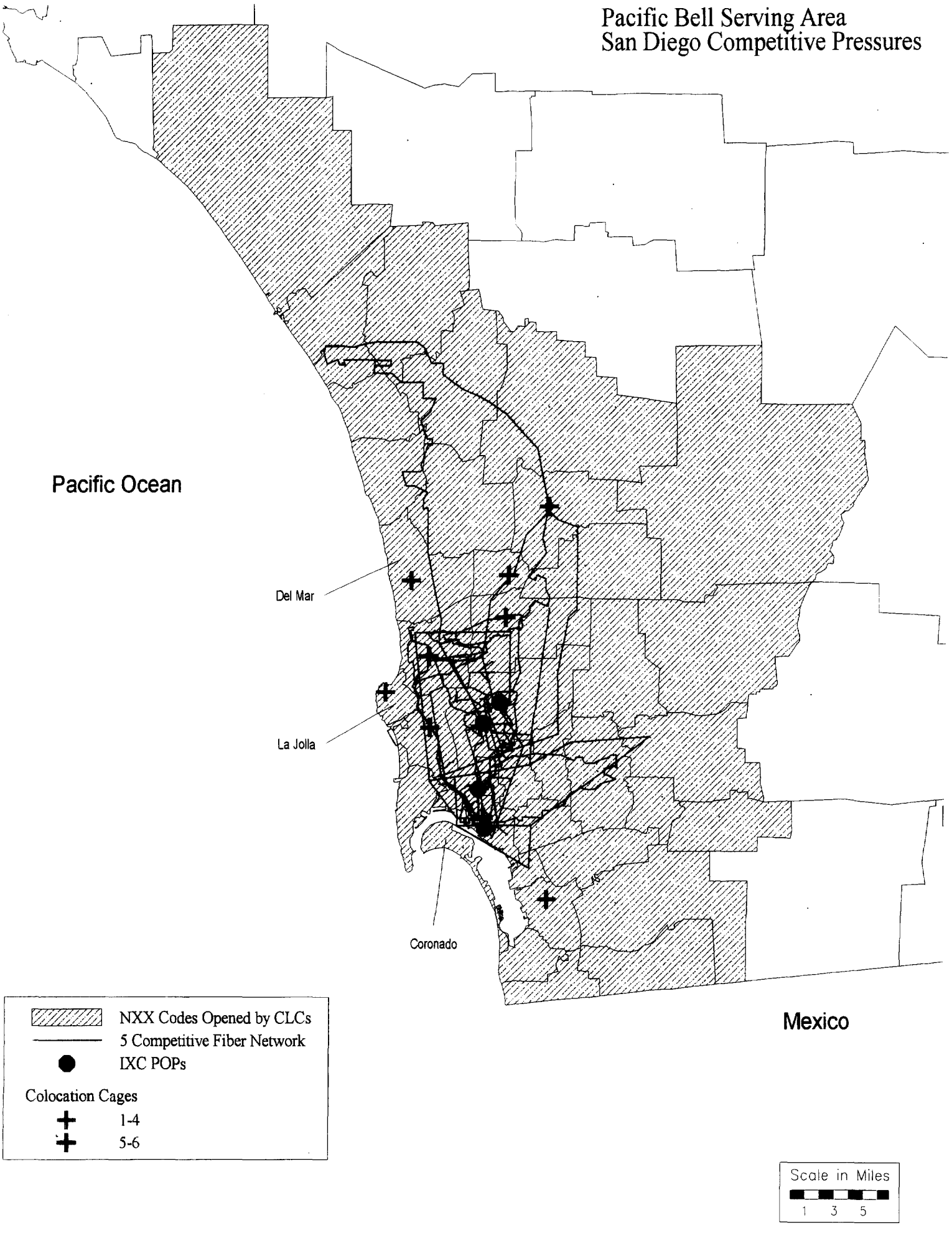
In just the past year....

- PB lost 10% Hicap market share in both the SF & LA regions, down to 55%
- NXX code openings grew 260% from 176 to 629
- Colocation cages doubled from 106 to 208
- The number of cross-connects grew 270% from 8,300 DS1 Equivalents to 30,717 DS1 Equivalents
- 78 companies have been granted authority to offer local service in California and an additional 38 are pending approval
- 22,500 Local Interconnection trunks have been installed and PB is now exchanging over 115M MOUs monthly with 8 different CLCs
- PB processed 15,000 resale orders in the past two weeks

Competitive Access Provider Activity



*Dots may represent more than 1 CAP Network
*Based on 3Q96 Market Research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5 Competitive Fiber Network
IXC POPs
Colocation Cages
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5-6
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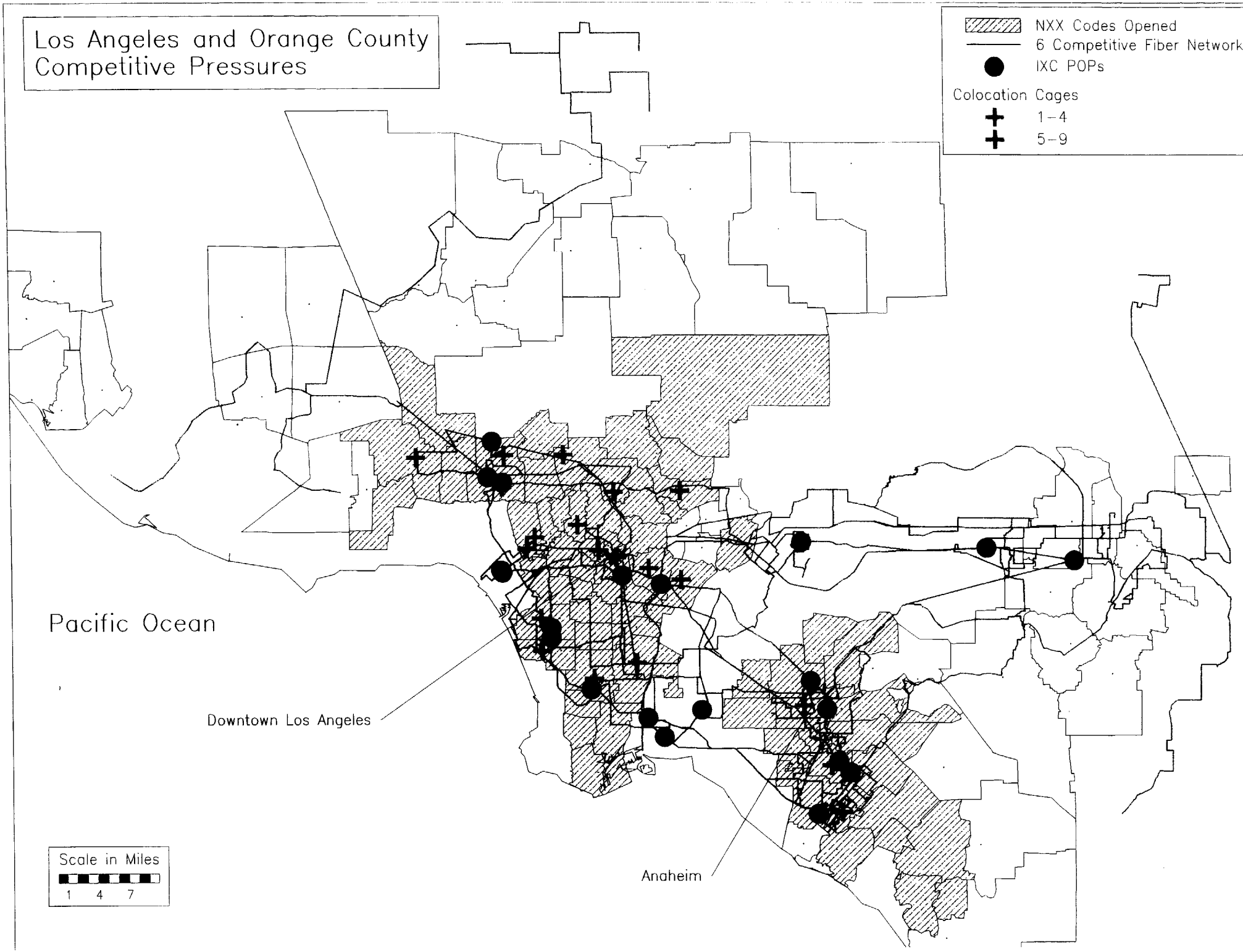
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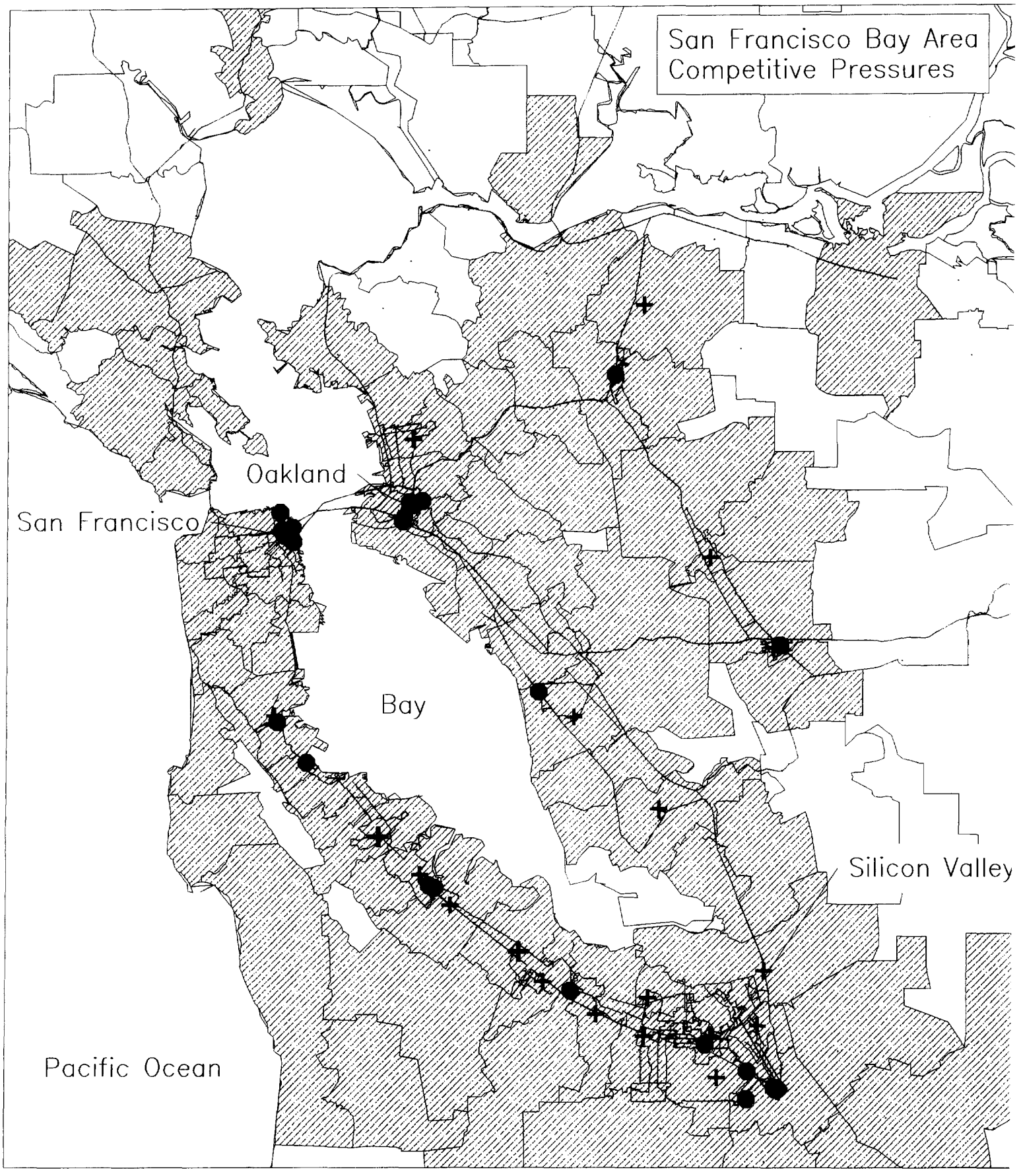
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Competitive Pressures
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San Francisco
Bay
Silicon Valley
Pacific Ocean
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NXX Codes Opened
6 Competitive Fiber Network
IXC POPs
Colocation Cages
1-4
5-9

The Promise of the Telecommunications Act is *Deregulation*

- Degree of regulation should be commensurate with the level of competitive alternatives in a relevant market
- Contract-based tariffs and rate structure flexibility will foster more robust, competitive markets with maximum consumer benefits
- "Compromise" solution should include preservation of Universal Service supported by all providers and customers and lower, more cost-based access charges

Attachments